CLAIMS

WHAT IS CLAIMED IS:

1. A method of producing collagen comprising:

providing collagen-containing tissues;

providing microorganisms; and

allowing the microorganisms to ferment the collagen-containing tissues.

2. The method of claim 1, wherein the microorganisms comprise bacteria.

3. The method of claim 2, wherein the bacteria are Gram positive.

4. The method of claim 3, wherein the bacteria are of the genus *Bacillus*.

5. The method of claim 1, wherein the microorganisms comprise yeast.

6. The method of claim 1, wherein the microorganisms comprises GRAS microorganisms.

7. The method of claim 6, wherein the GRAS microorganisms are Gram positive.

8. The method of claim 1, wherein the collagen-containing tissues are obtained from mammals.

9. The method of claim 8, wherein the mammals are porcine animals.

10. The method of claim 1, wherein the collagen-containing tissues are obtained from aquatic animals.

11. The method of claim 10, wherein the aquatic animal is fish.

12. The method of claim 11, wherein the fish is shark.

13. The method of claim 1, wherein the collagen-containing tissues are obtained from birds.

14. The method of claim 13, wherein the birds are chickens.

15. The method of claim 1, further comprising extracting collagen from the fermented tissues.

16. The method of claim 15, further comprising dissolving the fermented tissues in acidic solutions.

17. The method of claim 16, further comprising removing insoluble tissues by filtration.

18. The method of claim 17, further comprising adding salt to the acidic solutions containing the fermented tissues to precipitate the collagen.

19. The method of claim 18, further comprising collecting the precipitated collagen by filtration.

20. The method of claim 15, wherein the collagen-containing tissues are obtained from mammals.

21. The method of claim 20, wherein the mammals are porcine animals.

22. The method of claim 15, wherein the collagen-containing tissues are obtained from aquatic animals.

23. The method of claim 22, wherein the aquatic animal is fish.

24. The method of claim 23, wherein the fish is shark.

25. The method of claim 15, wherein the collagen-containing tissues are obtained from birds.

26. The method of claim 25, wherein the birds are chickens.

27. The method of claim 15, further comprising the step of hydrolyzing the extracted collagen.

28. A method of producing collagen comprising:

providing collagen-containing tissues from one or more of mammalian, avian, or aquatic animal sources;

providing Gram (+) bacteria belonging to the genus *Bascillus;*

fermenting the collagen-containing tissues at about 10% w/v in a fermenter with the bacteria;

dissolving fermented tissues in an acidic solution with an enzyme;

removing insoluble tissues by filtration; and

adding salt to the acidic solution sufficient to precipitate collagen and keeping it undisturbed overnight to precipitate the collagen.

29. The method of claim 28, wherein the collagen-containing tissues is fermented with about 160 ul bacteria.

30. The method of claim 28, wherein the acidic solution is about 1% w/v to about 50% w/v of 0.5M acetic acid (pH 3.0).

31. The method of claim 28, wherein the enzyme is pepsin at about 0.2% to about 5% w/v.

32. The method of claim 28, wherein the salt is about 400 to 600 grams.

33. A method of producing collagen comprising:

providing collagen-containing tissues from an avian source;

providing Gram (+) bacteria belonging to the genus *Bascillus;*

fermenting the collagen-containing tissues at about 10% w/v with about 160ul of the bacteria and nutrient medium in a fermenter for about 24 hours;

dissolving fermented tissues at about 3% w/v in an acidic solution with about 0.5M acetic acid (about pH3.0) and about 1% w/v pepsin and stirring for about 48 hours;

removing insoluble tissues by filtration; and

adding about 560 grams of salt to the acidic solution sufficient to precipitate collagen and keeping it undisturbed overnight to precipitate the collagen.

34. The method of claim 33, wherein the avian source is chicken.

35. A method of producing collagen comprising the steps of:

providing collagen-containing tissues from one or more of mammalian, avian, or aquatic animal sources;

providing Gram (+) bacteria belonging to the genus *Bacillus;*

fermenting the collagen-containing tissues at about 10% to about 40% w/v with about 10 ul of the bacteria in a fermenter; and

dissolving fermented tissues in acidic solution with about 0.5M acetic acid (about pH3.0) and pepsin.

36. The method of claim 35, wherein the collagen-containing tissues is fermented for about 18 to about 48 hours.

37. The method of claim 35, wherein fermented tissue is about 1% w/v to about 50% w/v of the acidic solution.

38. The method of claim 35, wherein the pepsin is about 0.2% to about 5% w/v.

39. A method of producing collagen comprising the steps of:

providing collagen-containing tissues from a mammalian source;

providing Gram (+) bacteria belonging to the genus *Bacillus*;

fermenting the collagen-containing tissues in a fermenter (about 10% to about 40% w/v) for about 18 to about 48 hours with about 10 ul of the bacteria and nutrient medium;

dissolving fermented tissues in aqueous solution (about 3% w/v) containing about 0.5M acetic acid (about pH3.0) and about 0.4% to about 2% w/v pepsin and stirring for not more than 48 hours.

40. The method of claim 39, wherein the mammalian source is porcine.

41. A collagen product comprising collagen monomers.

42. The collagen product of claim 41, wherein the collagen monomers is at least about 10% by weight of the weight of total collagen in the collagen product.

43. The collagen product of claim 41, wherein the collagen monomers is at least about 50% by weight of the weight of the total collagen in the collagen product.

44. The collagen product of claim 41, wherein the collagen monomers is at least about 80% by weight of the weight of the total collagen in the collagen product.

45. The collagen product of claims 41, 42, 43 or 44, wherein the collagen monomers are obtained from collage-containing tissues through a fermentation process.

46. The collagen product of claim 45, wherein the fermentation process is carried out with microorganisms comprising bacteria.

47. The collagen product of claim 45, wherein the fermentation process is carried out with microorganisms comprising yeast.

48. The collagen product of claim 45, wherein the fermentation process is carried out with microorganisms comprising GRAS microorganisms.

49. The collagen product of claim 48, wherein the GRAS microorganisms are Gram positive microorganisms.

50. The collagen product of claim 45, wherein the collagen-containing tissues are obtained from mammals.

51. The collagen product of claim 45, wherein the collagen-containing tissues are obtained from aquatic animals.

52. The collagen produt of claim 51, wherein the aquatic animal is fish.

53. The collagen product of claim 45, wherein the collagen-containing tissues are obtained from birds.